

Appl. No. 09/787,453  
Atty. Docket No. CM1910  
Amdt. dated 06/24/2004  
Reply to Office Action of 04/06/2004  
Customer No. 27752

#### REMARKS

Claims 1 – 7, 9 – 16, 24 – 27 and 30 – 36 are pending in the present application. Claims 8, 17 – 23, 28 and 29 are canceled without prejudice and Claims 30 – 36 are newly added. No additional claims fee is believed to be due.

Claim 1 has been amended to correct a typographical mistake regarding the term “components”, to incorporate the limitations of canceled Claims 8 and 17, and to include encapsulating materials as one type of “chemical component”. Support for the latter amendment is found in the Specification from page 28, line 36, to page 29, line 12. Claim 1 has also been amended to clarify that it is the “amino acid sequence” that is comprised by a “cellulose binding domain”. Finally, Claim 1 has been amended to call for the covalent linkage of the amino acid sequence to the chemical components via a polyethylene glycol derivative. Support for this amendment is found on page 6, lines 18 – 23.

Claims 2 – 5, 7 and 14 – 15 have been amended to include the proper antecedent basis. Claim 7 has further been amended for ease of reading. Claims 9 – 14, 16, 24, and 25 have been amended to include the proper alternative expressions as per *Ex Parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). Claim 9 has further been amended to depend from currently amended Claim 1, instead of canceled Claim 8, the limitations of which are now incorporated into Claim 1. Claim 10 has further been amended to eliminate the use of trademarked names for aldehydes of interest in the present invention: the term “Iso-super” has been replaced with its common chemical name, 2-acetyloctahydro-2,3,8,8-tetramethylnaphthalene; the term “Helional<sup>TM</sup>” has been replaced with its common chemical name,  $\alpha$ -methyl-3,4-methylenedioxy-hydrocinnamic aldehyde and the term “Lilial<sup>TM</sup>” has been eliminated in favor of its common chemical name which was previously contained in the subsequent parentheses. Claims 10, 12 and 13 have been amended to correct the errant capitalizations of the un-trademarked chemical names. Claim 10 has also been amended to correct punctuation. Claims 12 and 13 have further been amended to correct the errant capitalizations of the un-trademarked chemical names. Claims 10, 14 and 16 have been amended to eliminate the information contained in the parentheticals. Claim 27 has been amended to include a method step. Claim 27 has further been amended to include the limitations in canceled Claims 28 and 29.

Claim 30 has been newly added. Support for this amendment is found in Claims 27 – 29 as originally presented.

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Claim 31 has been newly added. Support for this amendment is found in canceled Claim 22. The term "weak bond" is defined in the Specification beginning at page 5, line 30, through to page 6, line 2, and also at page 28, lines 26 – 31.

Claim 32 has been newly added. Support for this amendment is found in canceled Claim 23.

Claim 33 has been newly added. Support for this amendment is found in the Specification from page 6, line 33 to page 7, line 1.

Claim 34 has been newly added. Support for this amendment is found in the Specification on page 7, lines 1 – 5.

Claim 35 has been newly added. Support for this amendment is found in the Specification on page 7, lines 5 – 7.

Claim 36 has been newly added. Support for this amendment is found in the Specification on page 7, lines 5 – 7.

No new matter has been added and no claims fees are believed to be due. Applicants believe that the present amendments and accompanying Remarks have placed the present application in condition for allowance. Accordingly, Applicants respectfully request timely and favorable action.

#### Claim Objections

The Office Action states that Claims 27 – 29 are objected to under 37 CFR 1.75(c) as being improper multiple dependent claims. Accordingly, Claim 27 has been amended to depend only from Claim 26 and Claims 28 and 29 have been canceled without prejudice.

Claims 8 – 14 and 16 – 29 are objected to in the Office Action, because the phrase "and/or" renders the claim indefinite. As observed in the Office Action, "alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims." Accordingly, Claims 9 – 14, 16, 24 and 25 have been amended to include the proper alternative expressions as per *Ex Parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). Claims 8, 17 – 23, 28 and 29 have been cancelled without prejudice. Concerning the and/or language that remains in Claims 24 – 25, Applicants assert that the phrase "laundry detergent and/or fabric care composition", particularly when it is a part of the claim preamble, presents no ambiguity with respect to the scope or clarity of the claims.

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In light of the present amendments, Applicants respectfully submit that the objections to Claims 8 – 14, 16 – 29 have been obviated. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objections.

As for the objection to Claims 10 and 12 for using abbreviations not defined in Applicants' disclosure, Applicants respectfully request the Examiner to identify the abbreviations to which the Office Action refers.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action states that Claims 1 – 5, 10 – 12, 14, 16 and 27 – 29 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention.

First, regarding Claims 10, 14 and 16, the Office Action states that the phrases recited in parentheses render the claims indefinite. Accordingly, the claims have been amended to eliminate the phrases recited in the parentheses.

Second, with regard to Claims 10 – 12, the Office Action asserts that the claims are indefinite, because they use trademarks or trade names as a limitation to identify or describe particular materials or products. Applicants note that "Iso E Super<sup>®</sup>", "Helional<sup>™</sup>" and "Lilial<sup>™</sup>" are the only trade names that Applicants are aware of as being disclosed in the claims. Accordingly, Applicants have amended Claim 10 to replace that "Iso E Super<sup>®</sup>", "Helional<sup>™</sup>" and "Lilial<sup>™</sup>" with their common chemical names. Additionally, Claims 10, 12 and 13 have been amended to correct the errant capitalizations of the un-trademarked chemical names.

Third, the Office Action rejects Claims 27 – 29 as being incomplete for omitting essential steps. Applicants have amended Claim 27 to include the positive step of contacting the fabric to be treated with the laundry detergent composition and/or fabric care composition according to Claim 26. Claims 28 and 29 have been canceled without prejudice.

Finally, the Office Action rejects Claims 1 – 5 as being indefinite under 35 U.S.C. § 112, second paragraph on the basis that the limitations recited therein do not clarify the boundaries of the subject matter for which patent protection is sought. In order to further delineate the boundaries of "chemical components" in Claim 1, Applicants have amended Claim 1 to incorporate the list of chemical components from canceled Claim 8. This amendment to Claim 1 also further delineates what is meant by "chemical components" in Claims 2 – 5, which are dependent upon Claim 1.

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In light of the present amendments, Applicants respectfully submit that the rejections to pending Claims 1 – 5, 10 – 12, 14, 16 and 27 under 35 U.S.C. § 112, second paragraph have been obviated. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections.

Rejection Under 35 U.S.C. § 102(a) Over *Fowler*

Claims 1 – 9, 14 – 16 and 24 – 29 have been rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,268,196, hereinafter referred to as "*Fowler*". Applicants respectfully traverse these rejections for the following reasons:

1. The instant application is a national stage application having an international filing date of September 30, 1998, which was filed under 35 U.S.C. §371.

2. Because the instant application is a national stage application, 35 U.S.C. § 363 provides that "[a]n international application designating the United States shall have the effect, from its international filing date under Article 11 of the treaty, of a national application for patents regularly filed in the Patent and Trademark Office except as otherwise provided in § 102(e) of this title."

3. Thus, even though the instant application entered the U.S. national stage on March 19, 2001, Applicants respectfully believe the instant application to be entitled to the international filing date of September 30, 1998 for the purposes of 35 U.S.C. § 102(a).

4. The *Fowler* reference cited by the Office Action has a publication and patent date of July 31, 2001. Therefore, Applicants believe that the *Fowler* reference is not a valid reference for the purposes of 35 U.S.C. §102(a) with respect to Claims 1 – 9, 14 – 16 and 24 – 29.

Because Applicants believe the *Fowler* reference to be an invalid one under 35 U.S.C. § 102(a), Applicants respectfully request withdrawal of the rejection thereunder to Claims 1 – 9, 14 – 16 and 24 – 29.

Assuming *arguendo* that the rejection to Claims 1 – 9, 14 – 16 and 24 – 29 had been raised under 35 U.S.C. § 102(e) instead of § 102(a), Applicants assert that *Fowler* still could not have anticipated the present invention because *Fowler* does not teach each and every element of either independent Claim 1 or the balance of the pending claims, Claims 2 – 7, 9 – 16, 24 – 27 and 30 – 36, that depend or ultimately depend from Claim 1. Applicants' assertion is based upon the following grounds.

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Currently amended Claim 1 discloses a **chemical entity** that is comprised of the following elements: (1) more than one **chemical component**; linked to (2) an amino acid sequence comprised by a **cellulose binding domain**. Cellulose binding domains are defined as the polypeptide amino acid sequences which occur as integral parts of large polypeptides or proteins consisting of two or more polypeptide amino acid sequence regions, especially in hydrolytic enzymes (hydrolases). *See* Specification from page 52, line 35 through page 53, line 4. Such enzymes can comprise more than one catalytic domain and one, two or three carbohydrate-binding domains, and they may further comprise one or more polypeptide amino acid sequence regions linking the carbohydrate-binding domain(s) with the catalytic domain(s), a region of the latter type usually being denoted a "linker". *See* Specification from page 52, line 22 to page 53, line 8. The cellulose binding domains of interest in the present invention are isolated from the respective source enzyme (which includes the other enzyme components such as the catalytic domain) for use in the chemical entity of Claim 1 in one of several ways including through genetic engineering, and selective or specific protease cleavage of the cellulose binding domain from the polypeptide chain in question. *See* Specification page 54, lines 11 – 24. Thus **the chemical entity disclosed in presently amended Claim 1 is comprised by only the cellulose binding domain of the source enzyme.**

In contrast, *Fowler* relates to "[i]mproved methods of treating cellulose containing fabrics with cellulose comprising contacting the cellulose fabrics with truncated cellulase enzyme". *See* Abstract. In other words, *Fowler* teaches the direct opposite of what is disclosed in the present invention; ***Fowler* teaches the use of enzymes comprised by only the *non-cellulose* binding domain components of the source enzyme.**

Specifically, *Fowler* indicates that cellulases are comprised of at least three distinct separable regions: "Protein analysis of the cellobiohydrolases (CBHI and CBHII) and major endoglucanases (EGI and EGII) of *T. longibrachiatum* [*T. longibrachiatum* is also known as *Trichoderma longibrachiatum* and has previously been classified as *Trichoderma reessei* according to Col. 8, lines 60-64] has shown that a bifunctional organization exists in the form of [1] a catalytic core domain and a smaller [2] cellulose binding domain separated by a [3] linker or flexible hinge stretch of amino acids rich in proline and hydroxyamino acids." *See* Col. 3, lines 19-2. *See* also Col. 7, lines 51-56 which put forth the same conclusion based upon gene analysis. "The catalytic core and the cellulose binding domain of a cellulase enzyme are believed to act together in a synergistic manner to effect efficient and often deleterious hydrolysis of cellulose fibers in a cellulose containing fabric." *See* Col. 11, lines 45-48. Thus *Fowler* excludes the cellulose binding domain from the enzymes used in the disclosed fabric treatment. Instead,

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*Fowler* "...specifically contemplates the use of truncated cellulase core, alone or in combination with additional cellulase components, to achieve excellent abrasion with reduced redeposition when compared to non-truncated cellulase." See Col. 20, lines 12-21. Moreover, *Fowler* defines "[t]he term 'truncated cellulase core' or 'truncated cellulase region'...[as] a peptide comprising the catalytic core domain of exo-cellobiohydrolase or endoglucanase, for example, EGI type, EGII type...or a derivative thereof that is capable of enzymatically cleaving cellulose polymers..." See Col. A12, lines 31-47. "Additionally, naturally occurring cellulase enzymes which lack a binding domain are contemplated as within the scope of the invention." See Col. 20, lines 12-21 "...[A] truncated cellulase core will not possess cellulose binding activity attributable to a cellulose binding domain. A truncated cellulase core is distinguished from a non-truncated cellulase which, in an intact form, possesses poor cellulose binding activity." See Col. 12, lines 38-42. Based upon these disclosures it is clear that *Fowler* claims a method for contacting a cellulose containing fabric with an effective amount of truncated cellulase wherein said truncated cellulase lacks a cellulose binding domain.

**Since *Fowler* specifically excludes the cellulose binding domains from the truncated cellulase it discloses for use in treating fabrics to confer desirable qualities, it does not teach or suggest each and every element of newly amended Claim 1 which in contrast does require a cellulose binding domain linked to more than one chemical component in order to obtain the chemical entity of use in the present invention. Thus *Fowler* cannot anticipate currently amended Claim 1 or the balance of pending claims that depend or ultimately depend therefrom: Claims 2 - 7, 9 - 21, 24, 27 and 30 - 36.**

For the aforementioned reasons, Applicants assert that *Fowler* does not anticipate the current invention under either 35 U.S.C. § 102(a) or 35 U.S.C. § 102(e).

**Rejection Under 35 U.S.C. § 102(a) Over *Jones***

Claims 1 - 9, 13 - 14, 16, and 19 - 29 have been rejected under 35 U.S.C. § 102(b) as being anticipated by International Publication No. WO 98/00500, hereinafter referred to as "*Jones*". Applicants respectfully traverse these rejections on the following bases.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131.01 quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F2d. 628, 631. Applicants respectfully submit that *Jones* does not teach each and every element of currently pending Claims 1 - 7, 9, 13, 14, 16 and 24 - 27 and cannot therefore anticipate them. Specifically, *Jones* does not teach the

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polyethylene glycol derivative linkers of instant Claim 1. But rather, *Jones* discloses linking regions consisting of imides, sulphonates, dihydroquinoline and glutaraldehyde (listed beginning on page 7). Since Claim 1 as amended requires the benefit agent to be covalently linked to the deposition aid via a polyethylene glycol derivative linker, *Jones* does not set forth each and every element of Claim 1, or pending Claims 2 – 9, 13 – 14, 16, and 19 – 29, which depend or ultimately depend from Claim 1. Therefore, Applicants respectfully request withdrawal of the § 102(b) rejections as applied to newly amended Claim 1 and the balance of the pending claims which depend or ultimately depend therefrom.

Rejection Under 35 U.S.C. § 103(a) Over *Jones* in View of *Cao*

Claims 10 – 12, and 17 – 18 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jones* in view of U.S. Patent No. 6,025,316, hereinafter referred to as “*Cao*”. Applicants assert that pending Claims 10 – 12 (Claims 17 – 18 have been canceled without prejudice) as well as Claim 1, from which these claims depend, are unobvious over *Jones* in view of *Cao* for the following reasons.

According to MPEP § 2143, in order to establish a prima facie case of obviousness, three basic criteria must be met: (1) there must be some motivation or suggestion to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations. Applicants submit that *Jones* in view of *Cao* does not meet all three of these criteria with respect to newly amended Claim 1 and the balance of the pending claims, including Claims 10 and 12, which ultimately depend therefrom. Specifically, *Jones* and *Cao* when combined do not teach or suggest all of the limitations of newly amended Claim 1.

*Jones* does not teach the polyethylene glycol derivative linkers of instant Claim 1. Instead, as noted above, *Jones* discloses linking regions consisting of imides, sulphonates, dihydroquinoline and glutaraldehyde (listed beginning on page 7). In contrast, even though *Cao* discloses a polyethylene glycol derivative linker, the polyethylene glycol polymers of *Cao* are not covalently bound to the surfactant and/or enzyme molecules and the fiber surfaces of fabrics that they “link”. But rather, the polyethylene glycol molecules of *Cao* “link” them together via hydrogen bonding. See Col. 2, line 41 through Col. 3, line 3. Since Claim 1 as amended requires the polyethylene glycol derivative to covalently link the chemical components to the amino acid sequence comprised of a cellulose binding domain, *Jones* in view of *Cao* does not teach or suggest all of the limitations of Claim 1 as is required under MPEP § 2143 for a proper § 103(a) rejection.

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For the aforementioned reasons, Applicants respectfully request withdrawal of the § 103(a) rejections as applied to pending Claims 10 and 12.



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Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejections. Early and favorable action in the case is respectfully requested.

Applicants have made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicants respectfully request reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1 - 7, 9 - 16, 24 - 27 and 30 - 36.

Respectfully submitted,

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June 24, 2004  
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